

Northeast Mine Safety & Health Conference

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GUARDING

IN A MINING OPERATION

**Guarding Machinery
at Metal & Nonmetal Mines**



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GUARDING IN A MINING OPERATION



GUARDING IN A MINING OPERATION



Moving Machine Parts 30 C.F.R. 56/57.14107

- (a) Moving machine parts shall be guarded to protect persons from ***contacting gears, sprockets, chains, drive, head, tail and take-up pulleys, flywheels, couplings, shafts, fan blades*** and similar moving parts that can cause injury.
- (b) Guards shall not be required where the exposed moving parts are at least seven feet away from walking or working surfaces.

Machinery and Components to Guard

- Crushers and screens
- Rotating equipment
- Drive & power transmission components
- Packaging and palletizing equipment
- Power tools and auxiliary equipment
- Conveying equipment
- Mobile equipment



Preamble: 30 CFR 56/57.14107

- Guards are meant to protect persons from:
 - Inadvertent, careless or accidental contact
 - Deliberate or purposeful work related actions



TYPES OF GUARDING

- Point of Contact Guarding
- Location Guarding
- Area Guarding

POINT OF CONTACT GUARDING



LOCATION GUARDING

The distance from the head drive pulley to the ground is greater than 7 feet.



AREA GUARDING



AREA GUARDING

- Be cautious as MSHA is focusing on Area Guarding



Preamble: 30 CFR 56/57.14107

- Work does not have to be assigned or directed by management or a supervisor
- The Standard does not address deliberate or purposeful, NON work related actions

Materials Used to Make Guards



Sheet metal



Expanded metal
mesh

Materials Used to Make Guards

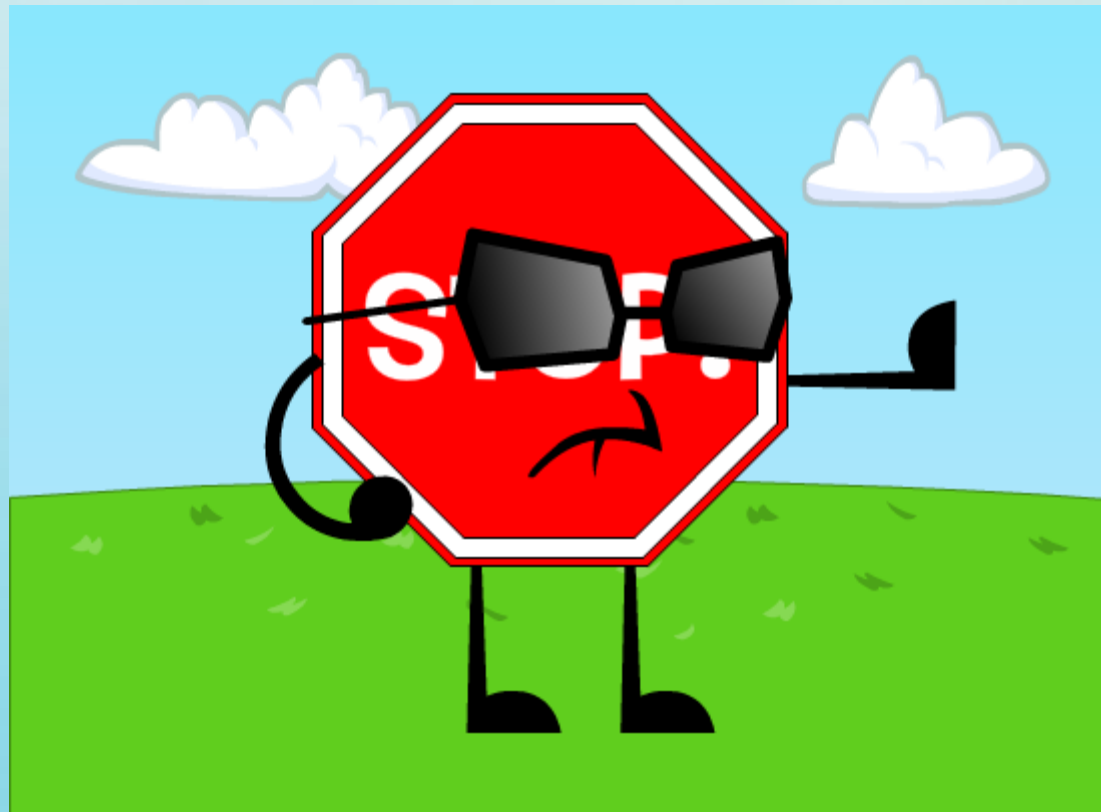


Properly Secured
Rubber



Screen Cloth

YOUR GUARDING EXPERIENCES

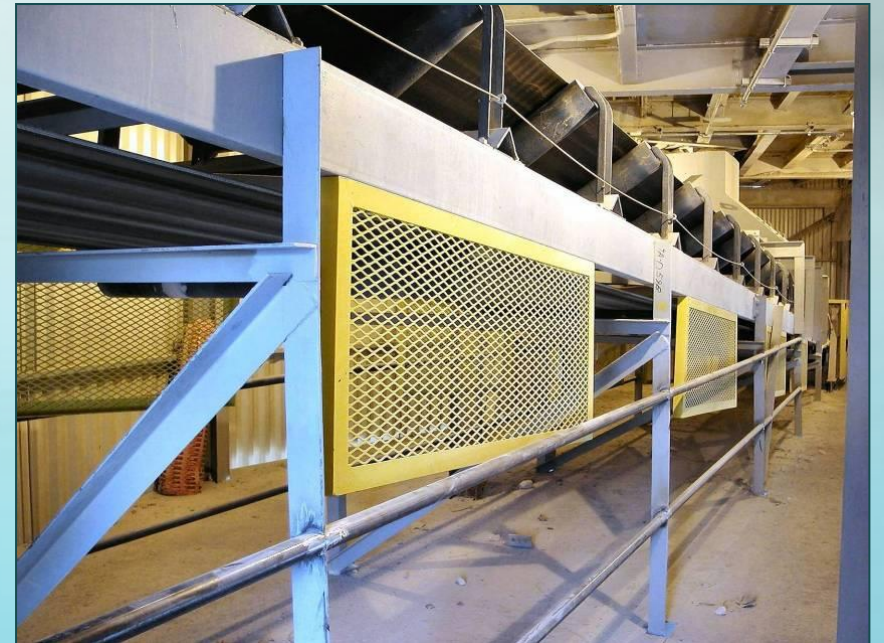
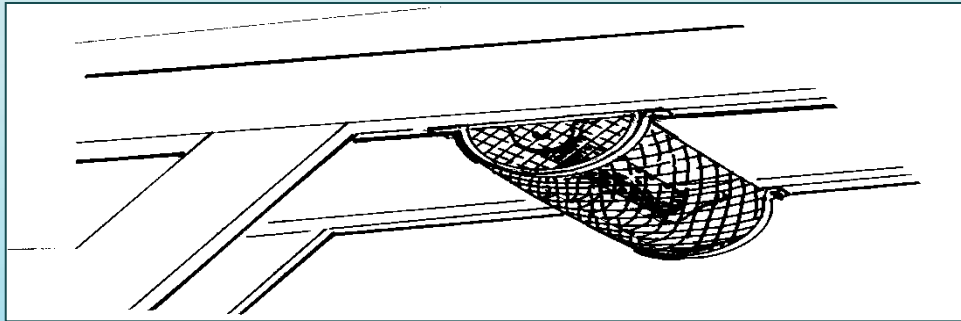


TAIL PULLEY GUARDS



If you can get under a tail pulley, evaluate for guarding

RETURN ROLLERS



Construction and Maintenance of Guards

Parts 30 C.F.R. 56/57.14112

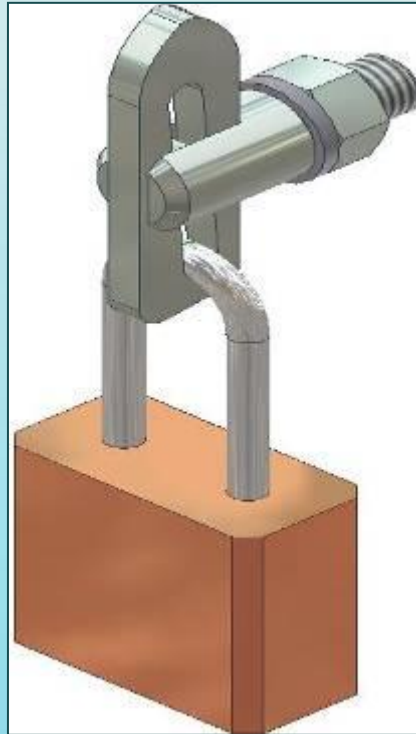
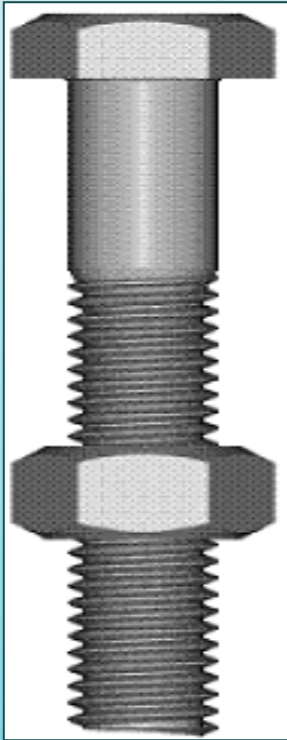
- (a) Guards shall be constructed and maintained to:
 - (1) Withstand the vibration, shock and wear to which they will be subjected
 - (2) Not create a hazard by their use

Construction and Maintenance of Guards

Parts 30 C.F.R. 56/57.14112

(b) Guards shall be securely in place while machinery is being operated, except when testing or making adjustments which cannot be performed without removal of the guard.

Fasteners & Fastening Systems



Fasteners & Fastening Systems

- Fastener locking devices are not required
- Tools are not required to remove a fastener
- What else do you use?

Fasteners & Fastening Systems



“THE GUARDING GAME”



“THE GUARDING GAME”

- Rules of the game
 - Two teams
 - Players approach the screen
 - Picture flashes on the screen
 - Player who hits the buzzer 1st
 - What are you looking at
 - Is it properly guarded
 - If not why
- Answers CORRECT – points are awarded
- Answers INCORRECT – points awarded to other Team



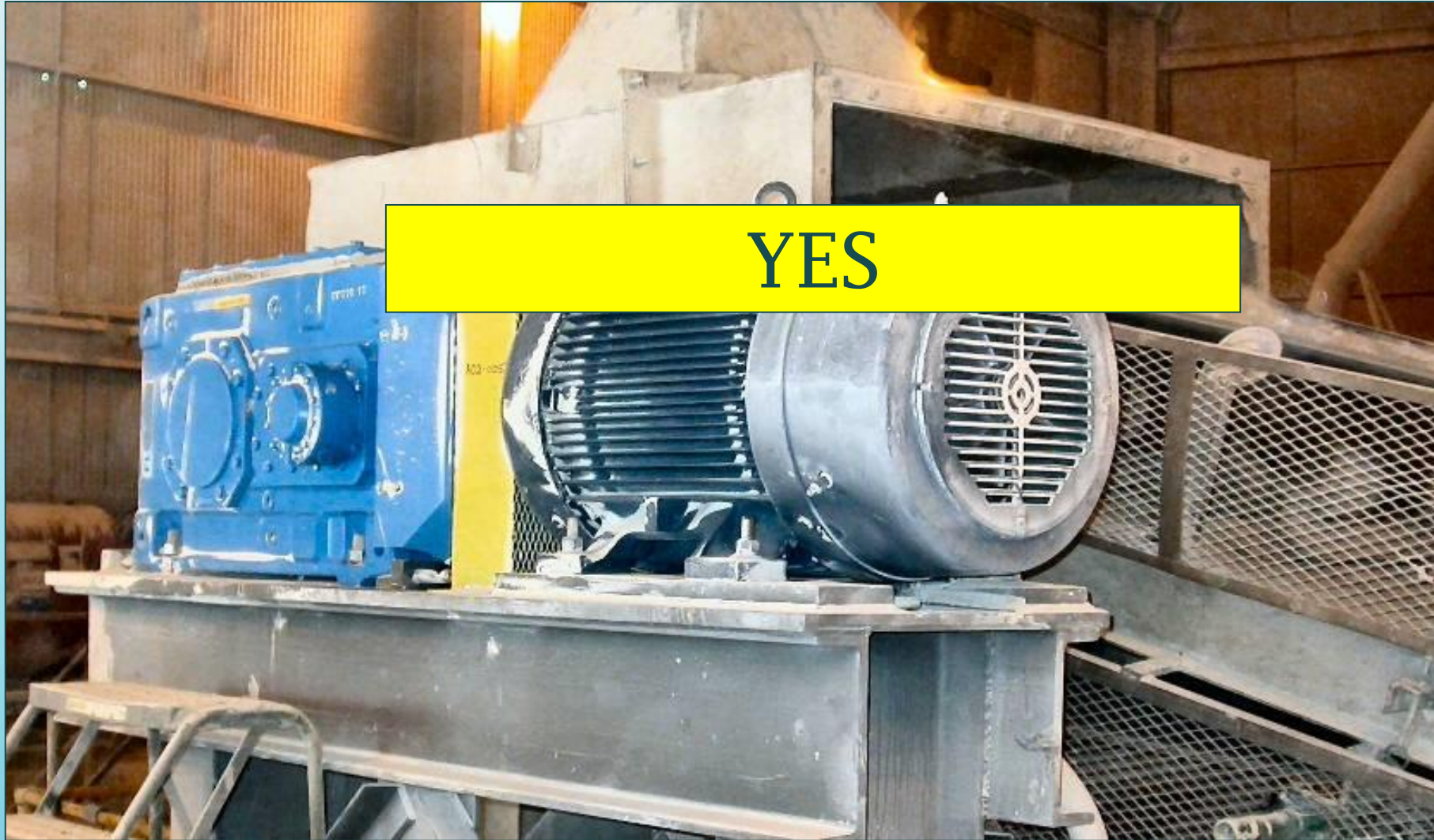
A photograph of a mechanical head section, likely from a mining or industrial machine. The image shows a complex assembly of metal parts, including a large, curved metal component and a white plastic housing. A yellow text box is overlaid on the center of the image, containing the text "NO - Head section - Guard belt and all moving parts".

NO - Head section -
Guard belt and all
moving parts

YES



YES





A photograph showing a mechanical shaft extension protruding from a metal mesh guard. The guard is made of a diamond-shaped metal mesh. The shaft extension is a cylindrical metal piece. A yellow text box is overlaid on the image with the text "NO - Shaft extension needs guarded".

NO - Shaft extension
needs guarded



A photograph of a large industrial machine, possibly a conveyor system or a large pump, featuring a drive belt and pulleys. The machine is dark-colored and appears to be in a dimly lit environment. A yellow text box is overlaid on the image, containing the text "NO -Drive belt - Moving parts need a guard".

NO -Drive belt -
Moving parts need a
guard



NO - Tail pulley -
Guard needs repair

YES










NO - Sprocket - Add
guard



NO - Tail Section -
Rehang and secure
guard



YES



NO - Return roller guard needs repaired/replaced

The image shows a close-up of a mechanical assembly, likely a conveyor system. A return roller guard, which is a metal grate, is visible and appears to be damaged or missing. The text overlay indicates that the guard needs to be repaired or replaced. The background shows various mechanical components, including rollers and structural beams.



NO - Tail section -
Rubber needs to be
secured at corners





YES

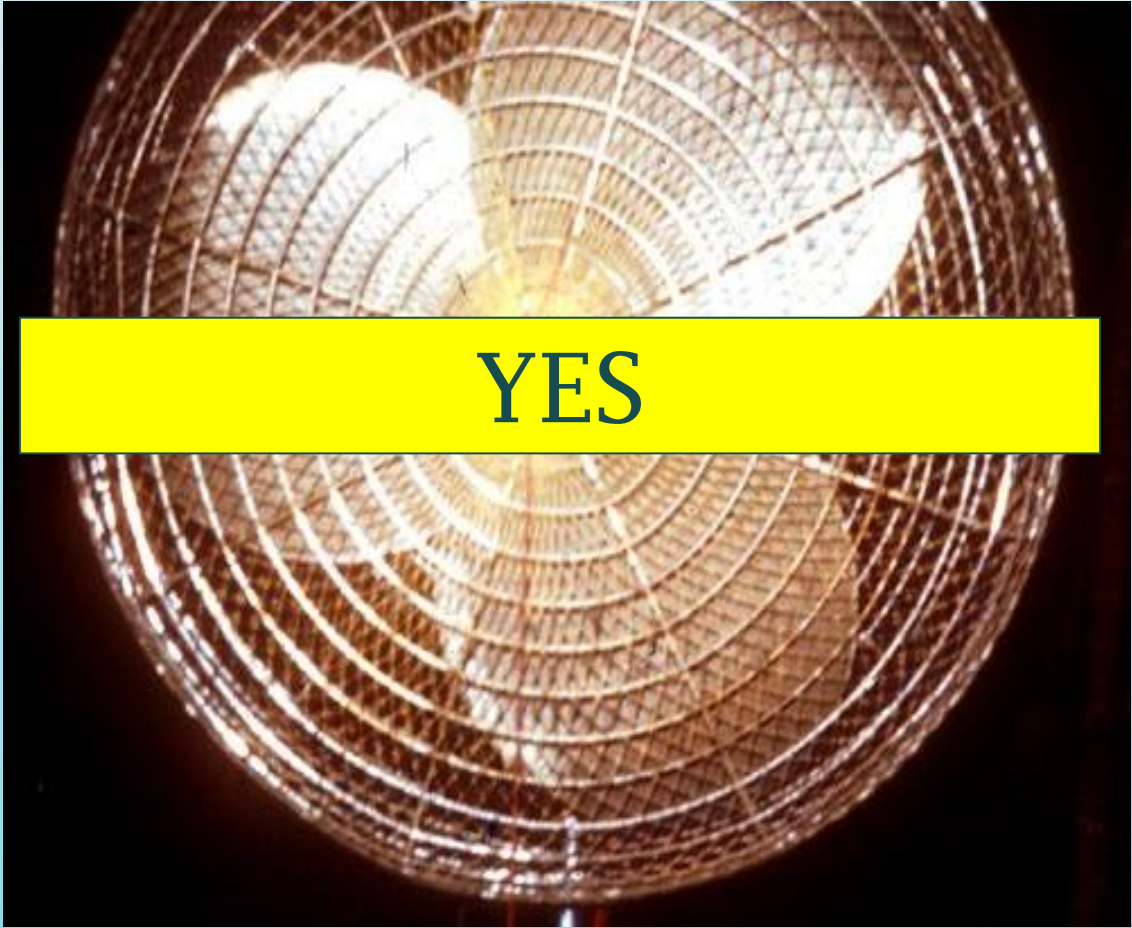


A photograph of a large industrial machine, possibly a conveyor system, featuring a large drive pulley and a belt. A yellow rectangular text box is superimposed over the center of the image. The background is a light blue gradient.

NO - Drive Belt -
Guard needs to be
added

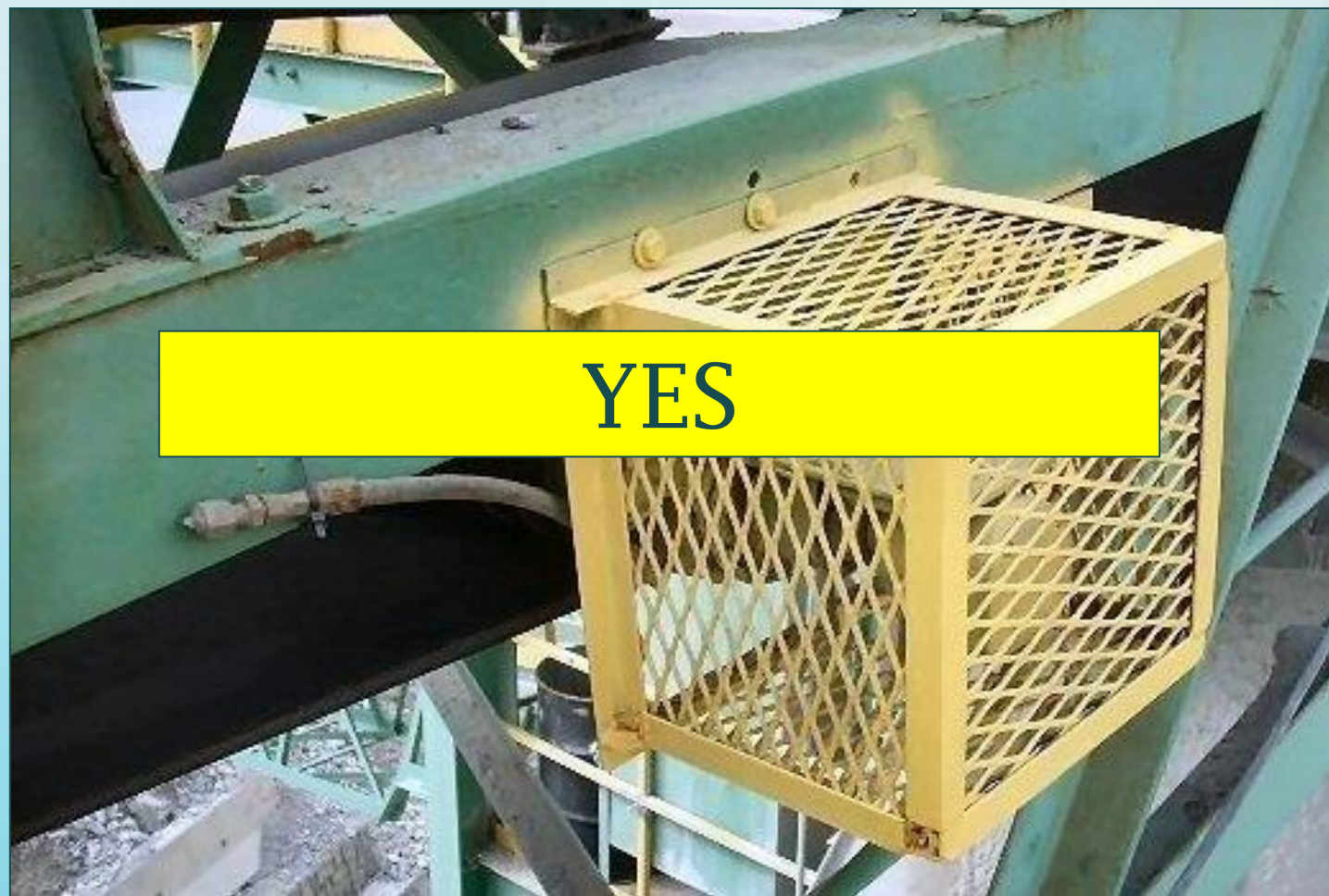


NO - Take up Pulley
- Needs barrier
around the area
below



YES







NO -Tail section
within 7 feet -
Needs guard



NO -Fan, if within 7
feet - Needs guard



THANK YOU
&
BE SAFE



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